AMENDMENTS TO THE CLAIMS:

The following claims will replace all prior claims in the application. Kindly amend claims 12 and 13, and add a new claim 14, as follows:

Listing of Claims:

1.   (original) A method for deriving barycentric coordinates for a point **p** within an n-sided polygon, wherein, for a particular coordinate w_j, corresponding to a vertex $\mathbf{q}_j$, the method embodies a formula which may be expressed as follows:

$$w_j = \frac{\cot(\gamma_j) + \cot(\delta_j)}{\|\mathbf{p} - \mathbf{q}_j\|^2}$$

where δ_j and γ_j are adjacent angles to the edge $\mathbf{pq}_j$ at the vertex $\mathbf{q}_j$.

2.   (original) The method of claim 1 tangibly embodied on or in a memory.

3.   (original) The method of claim 2 wherein a series of instructions or program code embodying the method is stored in a memory.

4.   (original) A method for deriving weights w_{ij} for expressing a vertex $\mathbf{q}_i$ in a mesh representation of an object surface in terms of its one-ring neighbors $\mathbf{q}_j$, $\forall j \in N(i)$, wherein, for a particular weight w_{ij}, corresponding to a vertex $\mathbf{q}_j$, the method embodies a formula which may be expressed as follows:

$$w_{ij} = \frac{\cot(\gamma_j) + \cot(\delta_j)}{\|\mathbf{q}_i - \mathbf{q}_j\|^2}$$

where δ_j and γ_j are adjacent angles to the edge $\mathbf{q}_i\mathbf{q}_j$ at the vertex $\mathbf{q}_j$.

5.   (original) The method of claim 4 tangibly embodied on or in a memory.

6.   (original) The method of claim 5 wherein a series of instructions or program code embodying the method is stored in a memory.

7.   (original) A method of parameterizing a mesh representation of an object surface comprising the steps of:

for one or more vertices $\mathbf{q}_i$ of the mesh representation, computing for one or more of its one-ring neighbors $\mathbf{q}_j$, $\forall j \in N(i)$, a weight $\mathbf{w}_{ij}$ in accordance with the following formula:

$$w_{ij} = \frac{\cot(\gamma_j) + \cot(\delta_j)}{\|\mathbf{q}_i - \mathbf{q}_j\|^2}$$

where δ_j and γ_j are adjacent angles to the edge $\mathbf{q}_i\mathbf{q}_j$ at the vertex $\mathbf{q}_j$; and

responsive to one or more of the weights w_{ij} determined in the foregoing step, determining the parameterized coordinates of one or more of the vertices of the mesh representation.

8.   (original) The method of claim 7 further comprising fixing the positions of one or more boundary vertices in parameter space.

9.   (original) The method of claim 8 further comprising assigning each of these vertices a position on a fixed boundary $\mathbf{C}$, where the position on the fixed boundary $\mathbf{C}$ assigned to a vertex i may be referred to as $\mathbf{C}_{u_i}$.

10.   (original) The method of claim 9 further comprising solving the following system of linear equations in order to derive the parameterization of the mesh representation:

$$\forall i, i \in [1....n], \begin{cases} \sum_{j \in N(i)} w_{ij}(\mathbf{u}_i - \mathbf{u}_j) = 0 & \textit{if i is an interior vertex} \\ \mathbf{u}_i = \mathbf{C}_{u_i} & \textit{if i is a boundary vertex} \end{cases}$$

where $\mathbf{u}_i$ is the vertex i in parameter space (and $\mathbf{u}_j$ is the vertex j in parameter space), and $\mathbf{C}_{u_i}$ is the boundary position in parameter space assigned to the boundary vertex i.

11.   (original) A method of parameterizing a mesh representation of an object surface comprising the steps of:

a step for computing, for one or more vertices q_i of the mesh representation and one or more of its one-ring neighbors q_j, $\forall j \in N(i)$, a weight w_{ij} in accordance with the following formula:

$$w_{ij} = \frac{\cot(\gamma_j) + \cot(\delta_j)}{\|q_i - q_j\|^2}$$

where δ_j and γ_j are adjacent angles to the edge q_iq_j at the vertex q_j; and

a step for determining, responsive to one or more of the weights w_{ij} determined in the foregoing step, the parameterized coordinates of one or more of the vertices of the mesh representation.

12.   (currently amended) ~~The methods of any of claims 1-11 tangibly embodied on or in a memory.~~ A processor readable medium tangibly embodying a method of any of claims 1-11.

13.   (currently amended) The ~~memory~~ medium of claim 12 wherein the method is embodied as instructions or program code stored in ~~the~~ a memory.

14.   (new) The medium of claim 13 wherein the memory is selected from the group comprising RAM, ROM, PROM, EPROM, EEPROM, hard disk, floppy disk, CD-ROM, DVD, and flash memory.